



INSTRUCTIONS

-J01243

2007-01-08

SCREAMIN' EAGLE 1340 CYLINDER HEADS

GENERAL

Kit Number

Table 1. Kit and Color

Kit	Color
16851-98A	Silver
16854-98A	Black
16976-99A	Black, non-highlighted

Models

These kits fit 1984 and later Evolution 1340 engines. See subtopics for additional parts for 1984 to 1992 models.

Kit Contents

See Figure 2 and Table 6.

Additional Parts Required

On all models, a Top End Overhaul Gasket Kit (17040-92A) must be purchased from your Harley-Davidson dealer.

▲ WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

NOTE

This instruction sheet references Service Manual information. A Service Manual for your model motorcycle is required for this installation and is available from a Harley-Davidson dealer.

NOTE

The valve springs in these cylinder head assemblies work with cams with up to 0.575 in. (14.6 mm) lift, and up to 6500 rpm.

Spark Plug Recommendations

The recommended plugs are 12 mm Evolution XL style engines:

Table 2. Spark Plugs

Part Number	Description	Application
32996-01	Platinum performance	1340 heads with standard CR pistons
32320-91	Performance	

Additional Cylinder Head Parts (1984-1992 Models)

To install these cylinder heads on 1984 to 1992 Evolution 1340 engines, the following additional parts are required:

Table 3. Additional Cylinder Head Parts

Description (Quantity)	Part Number
Cylinder studs (8)	16837-85C
Head bolts, long (4)	16478-85A
Head bolts, short (4)	16480-92A

NOTE

The above parts are required to update the fasteners to those used on Evolution 1340 engines since 1992.

Additional Crankcase Ventilation Parts (1984-1992 Models)

For 1984 to 1992 Evolution 1340 engines, it is recommended to update the air cleaner, rocker boxes, breather gear, and use an oil/air separator in the breather trap (located in cam cover). This update to improve breathing and reduce oil carry-over requires the following parts:

Table 4. Additional Crankcase Ventilation Parts

Description (Quantity)	Part Number
Outer rocker covers (2)	17528-92
Rocker cover spacers (2)	17529-92
Inner rocker covers (2)	17530-92
Breather valve gear	25310-82A
Air/oil separator	25329-91
Air cleaner backplate	29134-92
Backplate breather screws (2)	3577

Follow procedures in applicable Service Manual to replace the above parts. The air/oil separator is installed in the breather trap (located in the cam cover).

NOTE

Plug the crankcase vent port when the backplate above, or a similar backplate, is used.

If an early-style backplate, or similar air cleaner, is used, then threaded cylinder head inserts (29304-92) must be installed.

When using the above parts, do not plug or reroute the crankcase vent.

INSTALLATION

NOTE

These Screamin' Eagle cylinder head assemblies are intended for high performance applications only. This engine related performance part is legal for sale or use on pollution controlled motor vehicles.

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Many Harley-Davidson® Parts & Accessories are made of plastics and metals which can be recycled. Please dispose of materials responsibly.

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NOTE

The product information label contained in this kit is required in the state of California only. This label is required to aid in passing the California Smog Check Program. Place the information label on the right side of the frame directly beneath the VIN sticker. Do not place the label over other product information labels. Do not place the label on motorcycles other than those specified in this instruction sheet.

1. Remove existing cylinder head assemblies. Refer to appropriate sections in Service Manual.
2. Install new cylinder heads following the instructions in the Service Manual and using new gaskets from Top Overhaul Gasket Kit (17040-92A).

NOTE

Due to increased compression ratio, use at least 91 octane gasoline. Octane rating is usually found on the pump.

3. Check cylinder head assemblies for proper installation and operation. Refer to appropriate sections in Service Manual.

VALVE CLEARANCE

These Screamin' Eagle cylinder heads have a different specification for intake valve stem protrusion from cylinder head boss than original equipment cylinder heads (1.970-2.004 in. (50.04-50.90 mm) for Screamin Eagle vs. 1.990-2.024 in. (50.55-51.41 mm) for original equipment). This results in the intake valve being 0.020 in. (0.51 mm) closer to the piston crown. This may become critical when using high lift and long duration camshafts.

Because of this, it is important to check valve-to-piston clearance as described below. We recommend that this inspection be performed by a Harley-Davidson dealer.

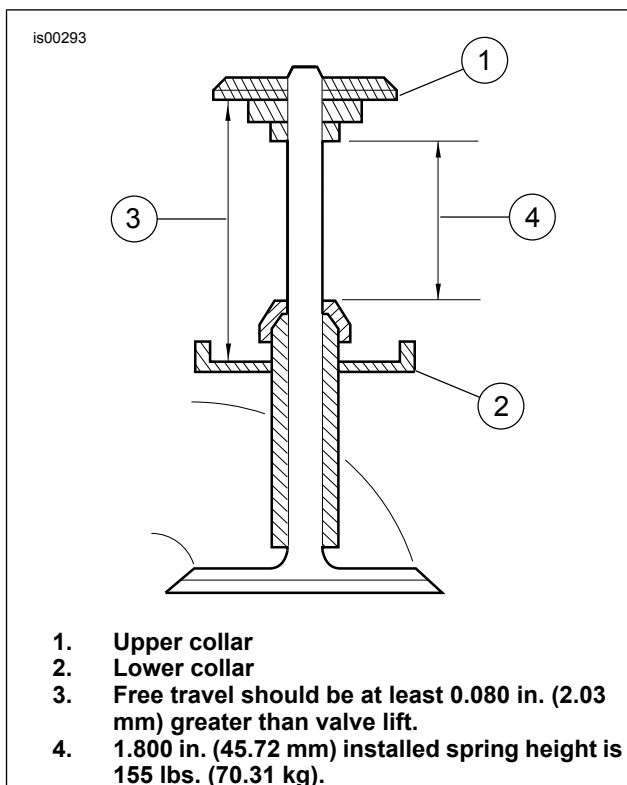
NOTE

The above parts are required to update the fasteners to those used on Evolution 1340 engines since 1992.

- Apply 1/8 in. (3.2 mm) layer of clay to crowns of pistons (in areas where valves meet pistons).
- Assemble heads and valve train, and tighten cylinder studs to torque as listed in appropriate Service Manual.
- Turn engine through two complete revolutions by hand.
- Remove heads and measure clay at its thinnest point.
- Clay must measure 0.080 in (2.03 mm) at thinnest point. If this measurement does not meet minimum thickness, depth of valve notches must be increased; however, the depth of the notches must not exceed 0.135 in. (3.43 mm).
- Since oversized valves are used, radial clearance must also be checked.

NOTE

Valves must be properly adjusted and new cam installed when claying pistons.



1. Upper collar
2. Lower collar
3. Free travel should be at least 0.080 in. (2.03 mm) greater than valve lift.
4. 1.800 in. (45.72 mm) installed spring height is 155 lbs. (70.31 kg).

Figure 1. Valve Clearance

VALVE SPRINGS

Valve Spring Height and Seat Pressure

The valve springs on these cylinder heads have an installed spring height of 1.800 in. (45.72 mm) which equals 155 lbs (70.31 kg) of seat pressure. Seat pressure can be changed by placing shims 18224-98 (0.015 in.) or 18225-98 (0.030 in.) under lower spring collars.

Every 0.015 in. (0.38 mm) reduction in spring height equals 5 lbs (2.27 kg) more of seat pressure.

Table 5. Examples of Spring Height and Seat Pressure

Spring Height	Seat Pressure
1.785 in. (45.34 mm)	160 lbs (72.58 kg)
1.770 in. (44.96 mm)	165 lbs (74.84 kg)

NOTE

Shim to desired seat pressure by placing shims under lower collar, but do not use more than 0.075 in. (1.91 mm) of shims.

Changing Valve Spring Height (Seat Pressure)

1. Compress valve springs and remove upper collar keys, upper collar, valve seals, and lower collar on all four valves.

NOTE

New seals must be installed. Because of the large diameter of the springs in this kit, there may be slight interference between the spring and the rocker box. If interference is detected, it will be necessary to remove a small amount of material from the rocker box.

- See Figure 2. Using shims required for desired seat pressure (see notes above), install lower valve spring collars, upper collars, and collar keys. Check installed spring height. Add shims or remove material from spring seat to reach installed spring height. Remove upper collar keys and upper collars and assemble cylinder heads following applicable Service Manual procedures.

SERVICE PARTS

See Figure 2 and Table 6. Cylinder heads come with valve seats (A) and (B) and valve guides (C) and (D) installed. Quantities are shown for kits. Only one cylinder assembly is shown.

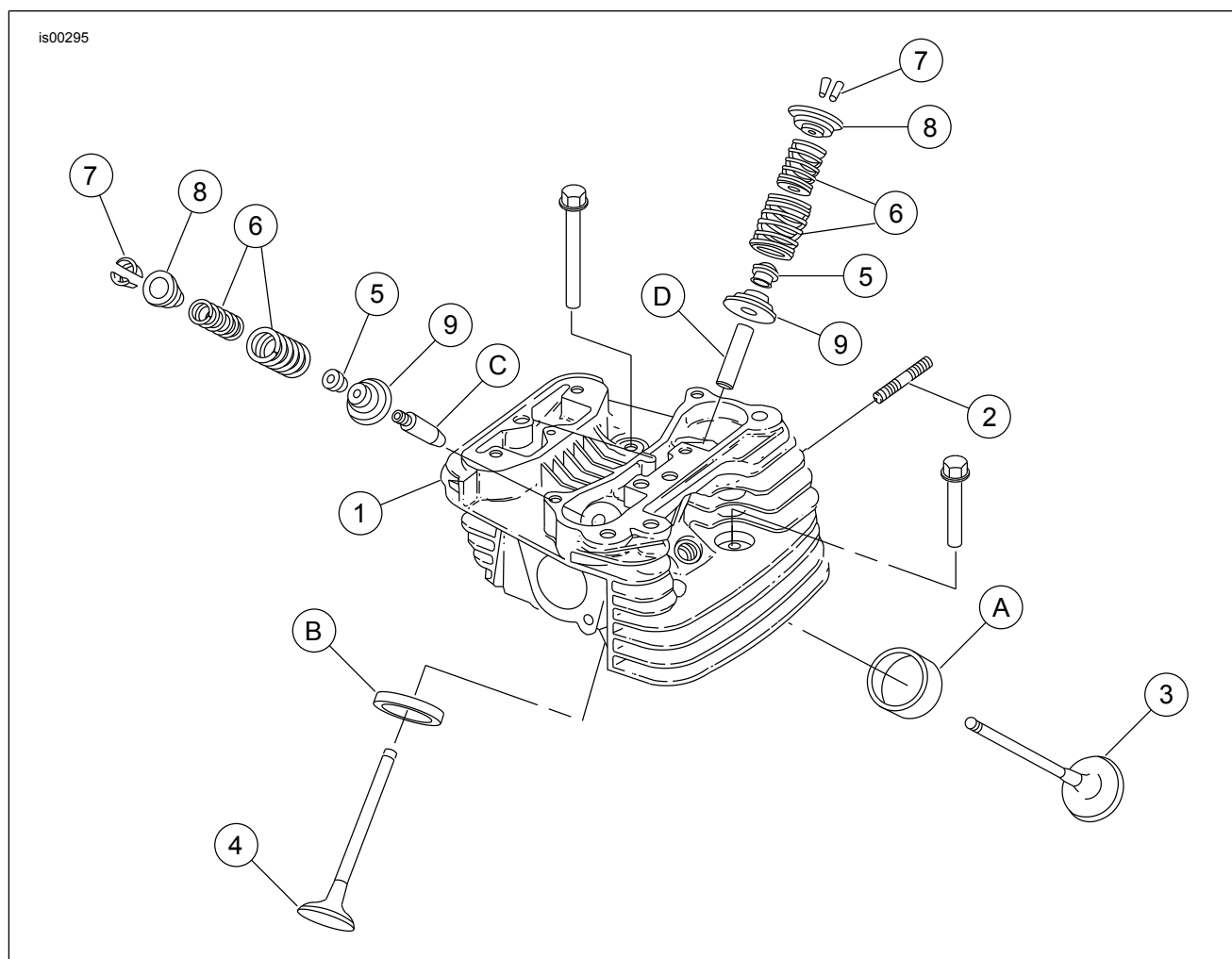


Figure 2. Service Parts: Screamin' Eagle 1340 Cylinder Heads

Table 6. Service Parts: Screamin' Eagle 1340 Cylinder Heads

Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Front cylinder assembly head (black)	16848-98A	9	Collar, valve spring-lower (4)	18207-06
	Rear cylinder head assembly (black)	16850-98A	10	Product information label (not shown)	Not Sold Separately
	Front cylinder head assembly (silver)	16847-98A	Valve seats and valve guides (intake and exhaust):		
	Rear cylinder head assembly (silver)	16849-98A	A	Valve seat, intake	18049-98
	Front cylinder head assembly (black, N-H)	16974-98A	B	Valve seat, exhaust	18048-98
	Rear cylinder head assembly (black, N-H)	16975-98A	C	Valve guides, intake	
2	Stud, exhaust port (4)	16715-83		+0.003 in.	18158-05
3	Intake valve (2)	18045-98		+0.002 in.	18156-05
4	Exhaust valve (2)	18044-98		+0.001 in.	18154-05
5	Seal, valve (4)	18046-98	D	Valve guides, exhaust	
6	Valve spring unit (4)	18208-06		+0.003 in.	18157-05
7	Retainer, valve collar (8)	18240-98		+0.002 in.	18155-05
8	Collar, valve spring-upper (4)	18206-06		+0.001 in.	18153-05